

AMENDMENT TO THE CLAIMS

The listing of claims will replace all prior versions, listings, of claims in the application:

Listing of claims:

1. (Previously Presented) A method of performing instrument tracking on an image comprising:

collecting in a collection device that rotatably moves a plurality of static 2D images using an image processing computer;

computing on a tracking data processor at least one of a position and orientation of at least one instrument for said plurality of static images; and

automatically displaying on an output device each image in said collected plurality of static 2D images in sequential image by image manner to create 3D information of said position and orientation of said instrument by creating motion through the animation process, wherein said at least one position and orientation of said at least one instrument is projected on each said image.
2. (Previously Presented) The method of Claim 1 wherein said plurality of static images comprise a plurality of 2D fluoroscopic images.
3. (Previously Presented) The method of Claim 1 comprising continuously presenting the image by image animation using a display.
4. (Cancelled)

5. (Previously Presented) The method of Claim 1 comprising calibrating at least one image of said collected plurality of static images such that said at least one position and orientation of said at least one image may be accurately displayed.

6. (Original) The method of Claim 5 comprising selecting at least one calibrated image to be a current image.

7. (Original) The method of Claim 6 comprising computing said at least one position and orientation for said at least one instrument for said current image.

8. (Previously Presented) The method of Claim 1 comprising collecting in said collection device using a image processing computer said plurality of static images using at least one moveable collection device.

9. (Original) The method of Claim 8 wherein said moveable collection device comprises a C-arm coupled to an imaging device.

10. (Previously Presented) A method of performing instrument tracking on a series of static images using an imaging device, comprising:

collecting a series of 2D static images in a collection device that rotatably moves using an image processing computer;

calibrating said series of 2D static images in said collection device using said image processing computer such that at least one of a position and orientation of at least one instrument may be accurately displayed in each image of said series of static images;

selecting at least one image of said series of 2D static images to be a current image;

computing in a tracking data processor said at least one position and orientation of said at least one instrument for said current image;

projecting said at least one position and orientation within said current image;

displaying said current image on an output device; and

automatically repeating said selecting, computing, projecting, and displaying steps to create 3D information of said position and orientation of said instrument by creating motion through the animation process using a sequential image by image presentation through said series of 2D static images.

11. (Previously Presented) The method of Claim 10 comprising collecting said series of 2D static images using a collection device that moves.

12. (Original) The method of Claim 11, wherein said collection device comprises a C-arm coupled to the imaging device.

13. (Previously Presented) The method of Claim 10 wherein said series of 2D static images comprise a series of 2D fluoroscopic images.

14. (Previously Presented) The method of Claim 10 comprising continually using said sequential image by image presentation through said series of 2D static images in a display.

15. (Previously Presented) The method of Claim 14 comprising projecting said at least one position and orientation of said at least one instrument into at least one image of said series of 2D static images.

16. (Original) The method of Claim 10 comprising incrementing at least said current image.

17. (Original) The method of Claim 16 comprising recomputing said at least one position and orientation of said at least one instrument.

18. (Previously Presented) An apparatus for performing instrument tracking on a series of static images, the apparatus comprising:

a collection device that rotatably moves and is adapted to collect a series of static images using an image processing computer;

a processing device communicating with at least said collection device and adapted to create 3D information by creating motion through the animation process by automatically and continuously presenting an image by image animation of said series of static images including at least one of a position and orientation of at least one instrument and at least one image of said at least one instrument located at said at least one of a position and orientation; and

an output communicating with at least said processing device and adapted to display said image by image animation of said series of static images.

19. (Original) The apparatus of Claim 18 wherein said collection device that moves comprises at least one C-arm.

20. (Previously Presented) The apparatus of Claim 18 wherein said collection device that moves comprises at least one transmitter device and at least one detector device.